



NATIONAL ARCHIVES OF AUSTRALIA

Standard for the Physical Storage of Commonwealth Records

National Archives of Australia

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Australian Government
National Archives of Australia

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1 INTRODUCTION

1.1 Background

Since 1995 the National Archives of Australia has made a number of significant policy changes regarding the custody and storage of Commonwealth records. The initial change to the Archives' policy dictated that the Archives would no longer take into custody short-term temporary records. This imposed a responsibility on Commonwealth agencies to store any records required for less than 30 years themselves or use alternative storage providers. In December 1998 the Archives advised agencies that it would continue to take into custody long-term temporary records required for more than 30 years, on a fee-for-service basis. Or, agencies could make alternative in-house or commercial storage arrangements. In March 2000, the Archives advised agencies that it would no longer accept custody of any temporary records.

These decisions forced Commonwealth agencies to find suitable alternatives for the storage of their short-term and long-term temporary records. To help agencies, the Archives published a guide for agency staff titled *Arrangements for the Custody and Storage of Temporary-value Commonwealth Records* (March 1995) and collaborated with the Department of Administrative Services to develop a common use arrangement known as Buyers' Guide 240 (BG240). BG240 enabled agencies to select suitable records storage services from commercial storage providers while, at the same time, satisfying the Commonwealth's commitment to minimise risk in government procurement.

BG240 established a series of stringent criteria for commercial storage providers seeking to do business with the Commonwealth government. These criteria related to the siting, design and construction of storage facilities; environmental conditions; disaster prevention and recovery; security measures; insurance cover and client service.

BG240 was intended to apply for a period of ten years, with an initial review after three years. Due to changes in government procurement policy, however, the common use arrangement was not extended beyond its initial three-year term (1997 to 2000). The National Archives has developed a standard that agencies and commercial providers can use to assess storage services. The development of the standard was informed by a public review of BG240 conducted by the National Archives in late 2000.

1.2 Purpose

Records help government agencies conduct their business in an efficient and accountable manner. They represent a corporate asset. Like any asset, records need to be managed.

This standard represents a voluntary code of best practice for the storage of government records and provides a tool to support and improve the management of those records. Its purpose is to provide a benchmark for assessing records storage facilities. It will help agencies assess their own in-house or self-storage arrangements as well as those offered by alternative storage providers (such as other government agencies or commercial businesses). It replaces the Archives' previous guide, *Arrangements for the Custody and Storage of Temporary-value Commonwealth Records* (March 1995) and the criteria that applied under BG240.

The objectives of the records storage standard are to ensure that:

- records are stored in the most cost-effective manner possible;
- records are protected, secure and accessible for as long as they are required to meet business and accountability needs and community expectations; and
- the subset of records selected as national archives are stored in the best possible conditions while in agency custody.

If records do not survive for the period that they are required for business or accountability purposes, agencies and the wider government may be exposed to unacceptable levels of risk and potentially costly consequences. If records sustain damage during their period of active use due to poor storage conditions, the government may incur significant expense to repair items that are subsequently transferred into archival custody. Storing records appropriately for their retention periods is therefore a good investment for agencies and the Commonwealth government as a whole.

1.3 Scope

This standard covers all records held in agency owned or leased facilities as well as those stored with alternative storage providers on behalf of agencies. The standard is primarily intended to help agencies provide appropriate storage arrangements for semi-active and inactive records of temporary value until they can be legally destroyed under relevant disposal authorisations (such as the *Administrative Functions Disposal Authority* (March 2000) or an agency-specific Records Disposal Authority). Such records are often transferred from an agency's work premises to an off-site storage facility owned or leased by the agency or managed under contract by alternative providers. Where relevant, agencies may also choose to apply the standard to the management of their active records.

The standard covers all types of storage media (for example paper, audiovisual material, microforms, and machine-readable formats such as magnetic tapes and optical discs), but excludes electronic records on networks or on hard drives. Electronic records require different storage options and the National Archives is currently examining this issue. Guidelines relating to the digital preservation of electronic records will be issued separately.

Agencies should be aware that a small proportion – or subset – of the records they create will have archival value and must be transferred to the National Archives' custody as soon as they are no longer required for immediate business purposes. It is important that agencies store such records in the best possible conditions while they are still in active use to ensure their long-term preservation. This standard also provides advice on these conditions.

1.4 Structure

This standard outlines seven principles that should be taken into account by agencies when they store records in a facility under their direct control, provided by another government agency or by a private company.

Each principle is stated and explained, and a list of minimum standards that satisfy each principle is provided as a guide for implementation. The principles are:

- **Location:** sites, facilities and areas for records storage should be located away from known hazards and be convenient to user needs.

- **Environmental control:** records should be stored in environmental conditions that are appropriate to their format and retention period.
- **Shelving and packaging:** the shelving, equipment and containers for records storage should ensure that records are secure, accessible and protected from deterioration.
- **Maintenance and security:** records storage facilities, areas and records should be maintained to safeguard their security, condition and accessibility.
- **Protection from disaster:** disaster management programs should be established and maintained to ensure that risks to records are minimised and managed appropriately.
- **Careful handling:** the retrieval and use of records in storage areas should be subject to controls that prevent damage and deterioration.
- **Accessibility:** records should be stored and controlled in facilities where they can be identified, located and retrieved easily.

1.5 Responsibilities

Agencies should assign responsibility for the management of records storage to an appropriate position within their organisation, such as the chief information officer or the corporate records manager. The management and monitoring of records storage services should be undertaken by staff with the relevant skills, knowledge and level of authority.

Where an agency has outsourced its records management operations, it is the agency's responsibility to make sure that its records are stored in conditions that are consistent with this standard.

Whether an agency stores its records in agency owned or leased facilities or outsources its records storage, agencies need to choose a storage solution that:

- best meets the needs of the agency; and
- ensures the accessibility and preservation of the records for as long as they are needed.

Agencies are encouraged to undertake a risk assessment to ensure that all relevant factors are taken into consideration when making storage decisions.

Agencies should ensure that their records are subject to a holistic management strategy. This involves:

- creating records in formats appropriate for their retention and use;
- storing records under environmental conditions appropriate to their format;
- storing records under environmental conditions appropriate to their retention period; and
- disposing of records when they are no longer required.

Agencies are strongly encouraged to determine the disposal status of their records at or before creation through the development of functions-based records disposal authorities. This approach will enable the most appropriate and efficient management strategy to be adopted from the earliest possible point in the recordkeeping process.

This can include, for example, choosing archival quality paper products to create any paper records that require long-term retention.

1.6 Service levels and contracts

When an agency arranges to contract out the storage of its records, there are a number of matters to consider. The agency will have to determine the level of anticipated use, that is:

- if the records will be rarely used;
- if the records will require regular retrieval; or
- if access to the records will be required on-site and, if so, by whom.

These issues will have a bearing on the need for, and nature of, ancillary facilities (such as viewing rooms, sorting areas and photocopiers).

Where an agency decides to use the services of a commercial storage provider, it is essential that both parties articulate their roles and expectations at the outset of the relationship. The service contract should clearly state the obligations and responsibilities of the agency and the storage provider. This should include consideration of liability and insurance issues. Such issues may be determined by the value of the records (reflected by their security and sensitivity attributes, vital record status and retention period) and the anticipated cost of recovery and restoration in the event that records are damaged during storage or transit.

It is essential for agencies to be aware of the total or 'whole of life' cost of storing records. This may encompass:

- the cost of periodically reviewing security classifications (to provide the minimum level of security required during storage);
- the cost of periodically sentencing and destroying records (to reduce storage requirements);
- the cost of withdrawing, lending and/or transporting records;
- the cost of conservation work (eg repackaging); and
- the cost of changing providers at the end of a contract period.

The terms and conditions of contractual arrangements will vary in each case.

The following documents provide further guidance on these issues.

- Australian Standard, AS 4390 – 1996, *Records Management*, Part 6: Storage Appendix D 'List of common components of a records storage services contract' (withdrawn). Note: this Standard has been superseded by AS ISO 15489 – 2002, *Records Management*, which does not include Appendix D.
- National Archives of Australia, *Records Issues for Outsourcing*, including General Disposal Authority 25, July 1998 (www.naa.gov.au/recordkeeping/disposal/authorities/GDA/PDF/GDA25.pdf).
- National Archives of Australia, *Using Contractors for Records Sentencing*, November 1996, (www.naa.gov.au/recordkeeping/outsourcing/outsourcing_records/records_manage/issues_outsource/contractors/intro.html).

The storage of Commonwealth records by alternative providers does not involve a legal transfer of ownership – the records remain the physical and intellectual property of the agency regardless of their location. However, such storage arrangements do involve a legal transfer of custody and must be authorised under section 24(2)(b) of the *Archives Act 1983*.

General Disposal Authority (GDA) 25 (issued in March 1998) authorises the transfer of custody of records to contractors providing services, such as storage, on behalf of the Commonwealth government. Agencies wishing to outsource records storage should ensure that contractual arrangements address the terms and conditions outlined in GDA 25 in order to satisfy the disposal requirements of the *Archives Act*.

1.7 Implementation

The minimum standards outlined under each principle in this document will enable agencies and service providers to assess their storage facilities and services against best practice.

This document is supported by *Storing to the Standard: Guidelines for Implementing the Standard for the Physical Storage of Commonwealth Records* (available from www.naa.gov.au/recordkeeping/storage/standard.html). These guidelines are designed to help agencies and providers apply and measure each of the seven principles.

Together, the standard and guidelines provide agencies with a voluntary code of practice for the storage of Commonwealth records. Agencies should use both documents to make informed decisions about the storage of their records.

1.8 Acknowledgements

The storage principles in this standard are drawn from national and international best practice. In particular, the standard draws on:

- Standards Australia, AS ISO 15489 – 2002, *Records Management*
- Standards Australia, AS 4390 – 1996, *Records Management, Part 6: Storage* (withdrawn)
- British Standards Institution, BS 5454 – 2000, *Recommendations for the Storage and Exhibition of Archival Documents*
- International Organization for Standardization, Draft ISO/DIS 11799 – 1998, *Information and Documentation – Document Storage Requirements for Archive and Library Materials* (discontinued)

The preparation of the standard has also been significantly informed by the following government storage standards:

- National Archives of New Zealand, NAS 9901, *Standard for the Storage of Public Records and Archives*, February 2000
- State Records Authority of New South Wales, *Standard on the Physical Storage of State Records*, April 2000

The National Archives gratefully acknowledges the contribution of staff of State Records New South Wales and the National Archives of New Zealand to the development of this standard.

1.9 Further information

Queries about this standard should be directed to:

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2 STORAGE PRINCIPLES

2.1 Location

Principle 1

Sites, facilities and areas for records storage should be located away from known hazards and be convenient to user needs.

Building location

Records should only be stored in facilities that are suitable for records storage. A light industrial area, such as a warehouse estate or a technology park, is preferred.

Buildings used to store records should not be located near known risks such as:

- floodplains, creeks, rivers or stormwater drains that may be prone to flooding or seepage from contaminants;
- earthquake prone areas or land liable to subsidence;
- hazardous or heavy industries associated with atmospheric pollutants such as oil refineries, chemical plants, paint or rubber factories;
- bushfire-prone areas;
- strategic installations such as munitions factories or fuel depots; or
- major airports or directly under flight paths due to risk of accident and exhaust pollutants.

If any of these risks are present, preventive measures should form part of the organisation's disaster management plan (see Principle 5 – Protection from disaster).

Building construction

Buildings chosen for records storage should:

- be soundly constructed of appropriate materials and well insulated to maintain stable environmental conditions;
- be fully weatherproof so that records are not at risk of exposure to the elements or infestation by vermin; and
- have good drainage to remove water from the building and surrounds as rapidly as possible.

Records storage areas

Records require controlled conditions for environmental, disaster and security reasons. It is therefore important that they are stored in dedicated areas. It may be possible to co-locate records and library materials in the same area, providing the security of the records is not compromised by such arrangements. Other parts of a storage facility may be used to store different types of goods, providing the records are not put at risk (see Principle 4 – Maintenance and security). Storage of potentially combustible or hazardous materials in other parts of a multi-purpose facility should not be permitted.

Records storage areas should be physically separated from:

- areas of known risk, eg kitchens, washrooms, electrical plants, overhead pipes and other exposed plumbing; and
- storage areas used for non-record purposes.

Subject to these risk considerations, decisions regarding the location of the storage facility should also take into account user convenience (see Principle 7 – Accessibility).

Potential storage locations and facilities should be inspected by appropriate personnel and authorised by a senior representative of the agency to ensure that they are suitable.

Minimum standards

1. The agency's authorised representative has approved all locations for records storage and use.
2. The storage site is located away from known risks such as flood plains, fuel depots and industrial installations.
3. The storage site has good drainage.
4. The building and its services (eg electrical, plumbing) comply with Australian building standards and codes.
5. The building's roof is pitched sufficiently to ensure rapid rainwater run-off and its guttering and down pipes are appropriate and well maintained to prevent water overflow or blockages.
6. The storage facilities are entirely weatherproof and sealed against dust, moisture penetration and the entry of birds and other pests.
7. The building and/or storage areas have controlled access.
8. Storage areas are dedicated to records or records and library storage.
9. Storage areas are isolated from internal hazards such as electrical plants and exposed plumbing.

Further reference

Ling, Ted, *Solid, Safe, Secure: Building Archives Repositories in Australia*, National Archives of Australia, Canberra, 1998, Chapter 2.

2.2 Environmental control

Principle 2

Records should be stored in environmental conditions that are appropriate to their format and retention period.

Record format

Records may be created in a variety of physical formats such as paper (files, maps and drawings), audiovisual media (photographs, xrays, microforms, cine films), magnetic media (computer tapes and disks, videotapes, audio tapes), optical media (laser discs, compact discs) and mixed media (models, objects). Many of these formats require special storage environments and equipment to ensure their preservation.

The optimal storage conditions for records in a wide range of common formats are provided in the Appendix to this standard. Specific advice on any other formats should be sought from the Archives.

Retention period

Retention periods will influence the storage environment chosen. Records that are required on a long-term basis should be stored in the best environmental conditions possible from the time of their creation. Such storage may be considered unnecessary for records that are only required for the short term. The Appendix provides further advice on the environmental conditions appropriate for short-term and long-term records storage.

Environmental conditions

Regular monitoring should be carried out in storage facilities to measure environmental conditions such as temperature, relative humidity and air quality.

Temperature and humidity are two of the most critical components in a storage program. High temperature and humidity levels can cause mould to grow. Conversely, low humidity levels will also have a deleterious effect on records (eg causing paper-based records to become brittle). When temperature and humidity levels fluctuate sharply, moisture is absorbed and released frequently, causing stress to the records. Temperature and humidity levels should remain as stable as possible and measures should be taken to ensure that they are sustained over time.

Airconditioning systems may enable these requirements to be met. To achieve optimal conditions for some record formats, specially designed airconditioning systems will be required. Standard airconditioning systems may suffice for other records depending upon location and format. For facilities without airconditioning, insulation and a suitable location can help to reduce temperature and humidity fluctuations (see Principle 1 – Location).

Pollutants (such as dust and carbon monoxide), airborne spores and poor cross-ventilation can affect the air quality within storage areas and also hasten deterioration of records. Careful initial selection of the storage location and the installation of circulation and filtration systems should minimise these risks. The layout of storage

areas and design of shelving systems can also promote good ventilation. Additional recommendations for air quality, according to the format and retention period of the records, are provided in the Appendix.

All records should be protected from direct sunlight. Ideally records storage areas should have no skylights or external windows. Where they do exist they should be covered or screened. Additional recommendations for light restrictions, according to the format and retention period of the records, are provided in the Appendix.

Minimum standards

1. Records are subject to appraisal before storage decisions are made so that appropriate environmental conditions can be selected.
2. Records of archival value are stored in environmental conditions as close as possible to the ranges described in Appendix Table C until they can be transferred to the National Archives' custody.
3. Records that are retained for a finite period, in accordance with approved disposal authorities, are stored in environmental conditions as close as possible to the ranges described in the relevant Appendix table until the records are destroyed.
4. Storage areas exclude direct sunlight.
5. Storage areas are well ventilated and insulated to maintain stable environmental conditions.
6. Storage areas for magnetic media include a filtration system to exclude dust and other particles, such as acidic and oxidising gases.
7. Environmental conditions are regularly monitored and sustained at appropriate levels over time.

Further reference

Ling, Ted, *Solid, Safe, Secure: Building Archives Repositories in Australia*, National Archives of Australia, Canberra, 1998, Chapter 3.

2.3 Shelving and packaging

Principle 3

The shelving, equipment and containers for records storage should ensure that records are secure, accessible and protected from deterioration for as long as they are required.

When selecting record housings (eg shelving, racks, cabinets), packaging (eg containers such as boxes) and materials-handling equipment, agencies should consider the physical characteristics of the record, its retention period and expected use.

Appropriate housings and packaging play a vital role in slowing down the rate of temperature and humidity changes; protecting items from light, dust and other pollutants; and minimising damage through handling. Records should be packaged in containers before they are moved into a storage facility.

To protect personnel who work with the records, all equipment used for records storage should satisfy occupational health and safety requirements including legislation, national standards and codes of practice.

Housings in storage areas should be:

- suitable for the type of record stored;
- clean and in good condition;
- strong enough to carry potential loads;
- raised off the floor as a disaster precaution; and
- arranged to promote good ventilation.

Containers used to store records should:

- be appropriate to the record format and retention period;
- be constructed of strong, durable material suitable for the weight of the records they contain, handling, and stacking on shelves or on pallets;
- be the correct size for the records they contain;
- be in good condition; and
- have a fitted lid to exclude light, dust, water and airborne pollutants.

Record storage containers should not be stored directly on the floor due to the risk of flood damage, dampness and dust. They should be stored on shelves or pallets.

The tables in the Appendix provide guidelines on the type of housing and packaging appropriate for the major types of storage media according to their retention period. Magnetic fields can distort the data contained in some record formats, such as computer disks and tapes. These formats may require dedicated storage areas and special packaging to protect them from such risk. Specific advice on these matters should be sought from the Archives.

Minimum standards

1. Records storage facilities, shelving, containers and equipment comply with occupational health and safety requirements.
2. Storage areas have sufficient floor loading capacity.
3. Where necessary, storage areas are protected from potentially damaging magnetic fields that may cause loss or distortion of data in some record formats.
4. Shelving and equipment used to store and handle records is appropriate to the format and retention period of the items.
5. Storage containers are clean, in good condition and appropriate to the format and retention period of the records they hold.

Further reference

Australian Archives and Standards Australia and Standards New Zealand, *Guidelines for Mobile Shelving for Archives, Libraries and Museums*, Commonwealth of Australia and Standards Australia, Canberra, 1997.

Ling, Ted, *Solid, Safe, Secure: Building Archives Repositories in Australia*, National Archives of Australia, Canberra, 1998, Chapter 4.

National Archives of Australia, *Archives Advice* series (www.naa.gov.au/recordkeeping/rkpubs/advice/index.html).

National Occupational Health and Safety Commission (Worksafe Australia) and Australian Chamber of Commerce and Industry, *National Standards and Codes of Practice* (April 1997) (www.nohsc.gov.au/OHSLegalObligations/NationalStandards/nationalstandards.htm).

2.4 Maintenance and security

Principle 4

Records storage facilities, areas and records should be maintained to safeguard their security, condition and accessibility.

All records require a basic level of security to ensure their authenticity, reliability and integrity, and to prevent misuse. There are general legislative requirements to protect government information from disclosure, as well as specific requirements to safeguard personal privacy, commercial and personal interests or national security.

Privacy

Information Privacy Principle 4 of the *Privacy Act 1988* holds agencies responsible for taking reasonable precautions to protect personal information and to prevent disclosure of personal information by a person providing a service to an agency. Section 70 of the *Crimes Act 1914* prohibits Commonwealth officers from disclosing information obtained as a consequence of their employment unless authorised to do so. Section 3 of the *Crimes Act* extends the definition of Commonwealth officer to a person who performs services for or on behalf of the Commonwealth or a public authority under the Commonwealth.

Security

The *Commonwealth Protective Security Manual* provides detailed guidance on the special management requirements for security classified information. The manual gives agencies the discretion to choose where they store classified material. In making this choice agencies must ensure that their in-house facilities or those of any commercial service providers they use comply with the minimum standards for the secure handling and storage of such information up to and including any nominated security level. These standards must be maintained for as long as the records require secure storage. Minimum standards governing the protection of security classified information are outlined in the manual. Commercial service providers can request access to the *Commonwealth Protective Security Manual* through existing client agencies in order to assess and upgrade the standard of their facilities. Bona fide providers may also consult the manual by arrangement with the National Archives.

Because security classification makes records more expensive to handle, store and transfer, agencies are encouraged to have procedures in place to review security classifications. Information should be declassified or downgraded when protection is no longer required at all or is no longer required at the original level.

In a storage facility, both classified and unclassified records should be protected through controlled access to the storage areas, and through a secure physical environment. Access to storage areas should be restricted to authorised personnel only.

Maintenance of facilities

Storage facilities need to be regularly monitored and well maintained to ensure that they provide a stable and suitable environment for records. The objective should be to

minimise emergencies through periodic maintenance and inspection of the building's fabric, fittings, services and holdings. Such schedules should conform with statutory requirements and manufacturer instructions.

Maintenance programs should be in place to monitor:

- the external fabric of the building and its surroundings;
- physical security of buildings and storage areas (including controlled access, unauthorised entry detection systems, perimeter fencing and external lighting);
- environmental conditions (including light and air quality levels, temperature and humidity);
- condition of utilities and internal fittings (eg electrical equipment, pipes, shelving, fire detection/suppression mechanisms);
- cleanliness of the storage areas; and
- mould or pest infestations.

Records maintenance

Insects, rodents and other vermin pose a significant risk to record holdings. Preventive measures, such as integrated pest management strategies, should form part of facility maintenance programs. Such strategies significantly reduce the need to use chemicals while providing the same, if not better, levels of protection for records.

Maintenance programs should also be in place to monitor the condition of individual records and the need for conservation work. Records should be monitored regularly for signs of vermin, mould, dust, corrosion, physical damage or other forms of deterioration. Repairs to records should be undertaken where necessary. This may be as simple as a repackaging exercise. However, a trained conservator should supervise or carry out any major repairs to records.

Occasionally the maintenance of the records may involve copying or conversion to other formats, such as microfilming. Where this occurs, procedures should be in place to ensure that:

- adequate care is taken during the process;
- the process is carried out according to recognised standards;
- copies are authenticated; and
- original records are only destroyed with appropriate disposal authorisation from the Archives.

Specific advice on copying or conversion should be sought from the Archives.

Planned maintenance programs for the storage facility and its records can prevent many storage problems and reduce long-term management costs.

Minimum standards

1. Storage facilities and areas are regularly maintained, monitored and inspected as part of an ongoing program.
2. Repairs to facilities are carried out promptly once problems are identified.

3. Policies and guidelines for access to record storage areas are clearly defined and communicated.
4. Access to record storage areas is controlled and restricted to authorised personnel only.
5. Security classified records are handled and stored in accordance with the *Commonwealth Protective Security Manual*.
6. Records are regularly monitored and appropriate conservation action is undertaken when needed.
7. Copying and conversion procedures are based on recognised standards.

Further reference

Ling, Ted, *Solid, Safe, Secure: Building Archives Repositories in Australia*, National Archives of Australia, Canberra, 1998, Chapters 3 and 6.

General Disposal Authority No. 22 for Records of Short-term Value that have been Copied, National Archives of Australia, Canberra, 1995.

National Archives of Australia, *Archives Advice – Preservation series* (www.naa.gov.au/recordkeeping/preservation/advices/preservation.html).

Attorney-General's Department, *Commonwealth Protective Security Manual*, Canberra, 2000, especially Part C (Information Security), Part D (Personnel Security) and Part E (Physical Security).

Privacy Act 1988 and *Crimes Act 1914*, available on the ComLaw website (comlaw.gov.au/).

2.5 Protection from disaster

Principle 5

Disaster management programs should be established and maintained to ensure that risks to records are minimised and managed appropriately.

Disaster management is an integral part of good management practice for all Commonwealth agencies. Many agencies will already have disaster, business continuity or risk management programs in place. At the very least, such programs should include the examination and treatment of risks to records, particularly those that are vital to business operations, and to buildings and areas for records storage.

Agencies that outsource their records storage should ensure that the commercial service provider's facilities are subject to a current disaster plan and that steps have been taken to minimise known risks.

Types of disaster

Disasters affecting storage facilities and records may include:

- natural events such as earthquakes, cyclones, bushfires, floods, vermin plagues;
- structural or building failure such as malfunctioning sprinklers, heating or airconditioning systems, roof leaks;
- industrial accidents such as nuclear or chemical spills;
- technological disasters such as viruses and computer equipment failures;
- criminal behaviour such as theft, arson, espionage, vandalism, riots, and terrorism;
and
- war.

Disasters may also be caused by storage conditions that are unsuitable for the media stored and by the natural decay of materials.

Fire

In order to reduce the risk of damage by fire, record storage areas should be fitted with alarms, heat and smoke detection equipment, and fire suppressant systems. For the optimum level of protection, install an automatic water sprinkler fire suppressant system compliant with Australian Standard AS 2118 and, in areas used for magnetic media storage, an automatic chemical fire suppressant system. Chemical fire suppressant systems are also recommended for confined records storage spaces because they pose less risk of damage to records than water-based systems. Where storage facilities are used for multiple purposes and sprinklers are installed, the record storage area should be separated by doors and walls with a two-hour fire rating. Where sprinklers are not installed, the records storage area should be separated by doors and walls with a four-hour fire rating.

Disaster management

Due to the strategic and operational importance of records and their role in public accountability, it is essential that agencies and/or their storage providers adopt disaster management strategies. Establishing and maintaining a disaster management program will ensure that disaster is averted or minimised. Such a program should cover four phases:

- prevention – identifying records vital to the agency and identifying and assessing risks to facilities where records are stored;
- preparedness – managing the risks through a disaster management plan;
- reaction/response – implementing the plan promptly when a disaster occurs and deploying resources to protect or secure the organisation from loss; and
- recovery – restoring the site and records to stable and useable conditions.

In many cases, cost-effective methods can be found to eliminate or reduce risks. These include improving maintenance practices, implementing integrated pest management strategies and monitoring security arrangements (see Principle 4 – Maintenance and security).

If a disaster occurs despite such preventive measures, a disaster management program will enable staff to know how to react and will ensure that they have access to adequate materials for initial response. A disaster management program should also enable staff to identify and contact people with specialised skills who can assist in records recovery and salvage. In this way, the agency will be able to ensure continued access to its vital records, salvage damaged records and resume normal business as soon as possible.

Minimum standards

1. Current disaster management plans are in place for all storage facilities and records, and known by staff.
2. Staff are assigned responsibilities in the records disaster management process and are trained to meet them.
3. Risks are identified and preventive measures incorporated in the design and management of records storage facilities.
4. Fire protection and suppression measures are in place including heat/smoke detection, fire alarms, extinguishers and sprinklers that comply with Australian Standard AS 2118.
5. After recovery from a disaster, the cause is identified and treated or managed and the disaster management plan is reviewed.

Further reference

Australian Standard, AS 4390 – 1996, *Records Management*, Part 6: Storage, Appendix B, 'Contents of a model disaster response plan'.

National Archives of Australia, *Disaster Preparedness Manual for Commonwealth Agencies*, Canberra, 2000 (www.naa.gov.au/recordkeeping/preservation/disaster/intro.html).

Emergency Management Australia, *Non-Stop Service: Continuity Management Guidelines for Public Sector Agencies*, Commonwealth of Australia, Canberra, 1997.

Ling, Ted, *Solid, Safe, Secure: Building Archives Repositories in Australia*, National Archives of Australia, Canberra, 1998, Chapter 6.

2.6 Careful handling

Principle 6

The retrieval and use of records in storage areas should be subject to controls that prevent damage and deterioration.

Records in all formats are likely to deteriorate if they are not treated correctly. Personnel may also be injured if appropriate occupational health and safety considerations are not observed during the handling of records. Steps should be taken to promote the correct handling, use and transport of records to minimise the risk of personal injury and to ensure the preservation of records for as long as they are required. Special techniques may be required to handle records in certain formats.

The following practices should be forbidden in or near records and records storage areas:

- smoking, as this encourages airborne pollutants and, at worst, fire;
- eating, as grease and food particles may collect on records and attract insects and other vermin; and
- drinking, as there is a risk that spillage may occur.

Handling procedures should also be developed for records in transit to ensure they are secured and protected against weather, light, pollution, unauthorised access, theft and other risks. For example, records should be transported in enclosed and secure vehicles, and loading and unloading should be carried out in covered areas by authorised personnel.

Rules for the safe and correct handling and use of records should be promulgated among all relevant personnel. This information may be communicated through:

- briefings, seminars or workshops;
- induction sessions for new staff;
- distribution of information sheets; and
- poster displays in storage areas.

Handling practices should be monitored and any breaches documented and promptly addressed.

Records of long-term value may be subject to additional controls to ensure that they survive for as long as they are needed. Such controls may include establishing policies and procedures for the copying or conversion of heavily used or fragile records (see Principle 4 – Maintenance and security).

Minimum standards

1. Policies and guidelines for records handling are consistent with occupational health and safety legislation, standards and codes of practice.
2. Policies and guidelines for records handling are clearly defined and communicated.

3. Policies and guidelines for the safe transport of records are clearly defined and communicated.
4. Records handling procedures are monitored appropriately.

Further reference

National Archives of Australia, *Archives Advice – Preservation series*
(www.naa.gov.au/recordkeeping/preservation/advices/preservation.html)

National Occupational Health and Safety Commission (Worksafe Australia) and Australian Chamber of Commerce and Industry, *National Standards and Codes of Practice* (April 1997) (www.nohsc.gov.au/OHSLegalObligations/NationalStandards/nationalstandards.htm).

2.7 Accessibility

Principle 7

Records should be stored and controlled in facilities where they can be identified, located and retrieved easily.

Authorised users must be able to locate and retrieve records from storage when required.

Decisions regarding the location of the storage facility, its design and the physical and intellectual systems used to control the records should be made with accessibility in mind. Records should be described and listed before they are stored. Location documentation, such as box lists and shelf numbers, should be in place so that the records can be found promptly. The control systems used by an agency responsible for the records and any commercial provider storing the records should be compatible. Control systems should be appropriate to the nature and retention period of the record.

Sufficient resources should be allocated to enable records to be retrieved by users within a specified timeframe. This should apply to both in-house and commercial arrangements.

Agencies should ensure that equipment or technology-dependent records remain accessible for as long as they are required (eg audiovisual material and magnetic tapes). This may involve the conversion or migration of some record formats during storage (see Principle 4 – Maintenance and security).

Records should not be physically removed and stored in commercial facilities outside of Australian territory unless agencies have fully considered the legal and accessibility ramifications and have received the written permission of the National Archives. Agencies must ensure that they can continue to conduct their normal business operations and meet their legal obligations under the *Freedom of Information Act 1982*, *Privacy Act 1988*, *Archives Act 1983*, *Crimes Act 1914* and any other legislation in relation to records if such arrangements are proposed.

Minimum standards

1. The location of record storage areas and storage facilities promotes easy access and retrieval.
2. Standards for documentation and location controls are in place that enable records to be identified and retrieved quickly and easily.
3. Records are not transferred and physically stored outside of Australian territory by commercial providers without the written permission of the National Archives.

Further reference

Australian Standard, AS 4390 – 1996, *Records Management*, Part 4: Control.

Freedom of Information Act 1982, *Privacy Act 1988*, *Archives Act 1983* and *Crimes Act 1914* available on the ComLaw website (comlaw.gov.au/).

3 MINIMUM STANDARDS SUMMARY

The intention of this consolidated checklist is to serve as a tool agencies can use to assess their own storage facilities and those of alternative storage providers. Each agency is responsible for interpreting the degree to which a record storage facility meets both the standard and their own particular requirements. Agencies are required to accept responsibility for the decisions they make.

The standard is supported by more detailed *Storing to the Standard: Guidelines for Implementing the Standard for the Physical Storage of Commonwealth Records* (available from www.naa.gov.au/recordkeeping/storage/standard.html). Agencies should use both documents to make informed decisions about the storage of their records.

Principle 1 – Location

1. The agency's authorised representative has approved all locations for record storage and use.
2. The storage site is located away from known risks such as flood plains, fuel depots and industrial installations.
3. The storage site has good drainage.
4. The building and its services (eg electrical, plumbing) comply with Australian building standards and codes.
5. The building's roof is pitched sufficiently to ensure rapid rainwater run-off and its guttering and down pipes are appropriate and well maintained to prevent water overflow or blockages.
6. The storage facilities are entirely weatherproof and sealed against dust, moisture penetration and the entry of birds and other pests.
7. The building and/or storage areas have controlled access.
8. Storage areas are dedicated to records or records and library storage.
9. Storage areas are isolated from internal hazards such as electrical plants and exposed plumbing.

Principle 2 – Environmental control

1. Records are subject to appraisal before storage decisions are made so that appropriate environmental conditions are provided.
2. Records of archival value are stored in environmental conditions as close as possible to the ranges described in Appendix Table C until they can be transferred to the National Archives' custody.
3. Records that are retained for a finite period, in accordance with approved disposal authorities, are stored in environmental conditions as close as possible to the ranges described in the relevant Appendix tables until the records are destroyed.
4. Storage areas exclude direct sunlight.
5. Storage areas are well ventilated and insulated to maintain stable environmental conditions.

6. Storage areas for magnetic media include a filtration system to exclude dust and other particles, such as acidic and oxidising gases.
7. Environmental conditions are regularly monitored and sustained at appropriate levels over time.

Principle 3 – Shelving and packaging

1. Records storage facilities, shelving, containers and equipment comply with occupational health and safety requirements.
2. Storage areas have sufficient floor loading capacity.
3. Where necessary, storage areas are protected from potentially damaging magnetic fields that may cause loss or distortion of data in some record formats.
4. Shelving and equipment used to store and handle records is appropriate to the format and retention period of the items.
5. Storage containers are clean, in good condition and appropriate to the format and retention period of the records they hold.

Principle 4 – Maintenance and security

1. Storage facilities and areas are regularly maintained, monitored and inspected as part of an ongoing program.
2. Repairs to facilities are carried out promptly once problems are identified.
3. Policies and guidelines for access to record storage areas are clearly defined and communicated.
4. Access to record storage areas is controlled and restricted to authorised personnel only.
5. Security classified records are handled and stored in accordance with the *Commonwealth Protective Security Manual*.
6. Records are regularly monitored and appropriate conservation action is undertaken when needed.
7. Copying and conversion procedures are based on recognised standards.

Principle 5 – Protection from disaster

1. Current disaster management plans are in place for all storage facilities and records, and known by staff.
2. Staff are assigned responsibilities in the records disaster management process and are trained to meet them.
3. Risks are identified and preventive measures incorporated in the design and management of records storage facilities.
4. Fire protection and suppression measures are in place, including heat/smoke detection, fire alarms, extinguishers and sprinklers that comply with Australian Standard AS 2118.
5. After recovery from a disaster, the cause is identified and treated or managed and the disaster management plan is reviewed.

Principle 6 – Careful handling

1. Policies and guidelines for records handling are consistent with occupational health and safety legislation, standards and codes of practice.
2. Policies and guidelines for records handling are clearly defined and communicated.
3. Policies and guidelines for the safe transport of records are clearly defined and communicated.
4. Records handling procedures are monitored appropriately.

Principle 7 – Accessibility

1. The location of record storage areas and storage facilities promotes easy access and retrieval.
2. Standards for documentation and location controls are in place that enable records to be identified and retrieved quickly and easily.
3. Records are not transferred and physically stored outside of Australian territory by commercial providers without the written permission of the National Archives.

4 GLOSSARY

Active records – those records required for the day-to-day functioning of an agency or person. Also referred to as current records. See J. Ellis (ed.), *Keeping Archives*, 2nd edition, Thorpe in association with the Australian Society of Archivists, Melbourne, 1993, p. 461.

Appraisal – the process of evaluating business activities to determine which records need to be captured and how long the records need to be kept, to meet business needs, the requirements of organisational accountability and community expectations. See Australian Standard, AS 4390 – 1996, *Records Management*, Part 1: General.

Archival value – those records that satisfy the National Archives' appraisal criteria. Also referred to as records selected for national archives. See National Archives of Australia, *Why Records Are Kept: Directions In Appraisal*, Canberra, 2000, (www.naa.gov.au/recordkeeping/disposal/why_keep/contents.html).

Electronic records – records communicated and maintained by means of electronic equipment. See Australian Standard, AS 4390 – 1996, *Records Management*, Part 1: General.

Inactive records – those records no longer required for the conduct of business and which may therefore be transferred to intermediate storage, archival custody or destroyed. See J. Ellis (ed.), *Keeping Archives*, 2nd edition, Thorpe in association with the Australian Society of Archivists, Melbourne, 1993, p. 472.

Long-term value/retention – those records that must be retained for a finite period of 30 years or more to meet identified business needs, accountability requirements and community expectations. See National Archives of Australia, *Caring for Commonwealth Records*, Canberra, 2000 at www.naa.gov.au/recordkeeping/preservation/care_records.html.

PAT/photographic activity test – standard testing procedure for enclosure materials (eg paper, board, foams, adhesives and inks) used for storage of photographic materials. See ISO 14523: 1999, *Photography – processed photographic materials – photographic activity test for enclosure materials*.

Recordkeeping – making and maintaining complete, accurate and reliable evidence of business transactions in the form of recorded information. See Australian Standard, AS 4390 – 1996, *Records Management*, Part 1: General.

Records – information created, received and maintained as evidence and information by an organisation or person, in pursuance of legal obligations or in the transaction of business. See Standards Australia, AS ISO 15489 – 2002, *Records Management*, Section 3.15.

Records selected as national archives – those records that satisfy the National Archives' appraisal criteria and should be preserved indefinitely. Also referred to as records of archival value. See National Archives of Australia, *Why Records Are Kept: Directions in Appraisal*, Canberra, 2000 (www.naa.gov.au/recordkeeping/disposal/why_keep/contents.html).

Storage – the function of storing records for future retrieval and use. See Australian Standard, AS 4390 – 1996, *Records Management*, Part 1: General.

Storage facilities – any building, equipment or system that houses records, including commercial storage facilities, in-house storage facilities and archival storage facilities. See State Records New South Wales, *Standard on the Storage of State Records*, Sydney, 1999, p. 29.

Temporary records – records that have value – to the Australian community, to the individuals and organisations who do business with the Commonwealth, and to Commonwealth agencies themselves – for a finite period of time. These records are also needed by agencies to meet specific accountability requirements. Previously referred to as short-term temporary records (retained for less than 30 years) and long-term temporary records (retained for more than 30 years). See National Archives of Australia, *Custody Policy for Commonwealth Records*, March 2000, (www.naa.gov.au/recordkeeping/custody/policy.html).

Vital records – records that are essential for the ongoing business of an agency, and without which the agency could not continue to function effectively. Vital records are those records that protect the assets and interests of the organisation as well as those of its clients and shareholders. See J. Ellis (ed.), *Keeping Archives*, 2nd edition, Thorpe in association with the Australian Society of Archivists, Melbourne, 1993, p. 481, and J. Kennedy and C. Schauder, *Records Management: A Guide to Corporate Recordkeeping*, Longman, South Melbourne, 1998, p. 302.

APPENDIX – GUIDELINES FOR RECORDS STORAGE

The following set of tables has been developed by the National Archives to help Commonwealth agencies provide optimum storage for a range of records types. The tables specify storage standards for Commonwealth records as follows:

- Table A – Records up to 30 years of age in tropical environments
- Table B – Records up to 30 years of age in non-tropical environments
- Table C – Records 30 years of age and over all environments

These tables are based on current understanding of the deterioration of commonly used materials. The levels described in the tables are set as the optimum levels that should be maintained to minimise the risk of degradation of various record media.

Any variation to the levels should be evaluated using a risk management approach: the greater the variation from the levels described, the greater the risk of serious degradation or information loss occurring. Levels of sustainable risk will vary depending on the value of the records to the agency's business and identified retention requirements.

Technical notes – all tables

The symbol '±' in the Temp/RH column under Environmental Conditions is used to describe allowable variations in temperature and relative humidity. For example, 20°C ± 2°C means that a temperature ranging between 18°C and 22°C is acceptable. Similarly, for relative humidity, 50% ± 5% means that the acceptable range is 45% to 55%.

The most important factor within these ranges is that the level remains constant. Fluctuations in temperature and relative humidity will hasten the deterioration rate of the records.

Technical notes – Table A – Records up to 30 years of age in tropical environments

For short-term value records in the tropics, the maximum recommended temperature and humidity levels are 27°C and 60% RH. In many tropical and sub-tropical climates it is not possible to achieve these climate levels without air-conditioning the records storage facility. Thus, to ensure minimal risk of deterioration of the records, the provision of airconditioned storage should be considered. Where it is not possible to provide airconditioned storage, then additional precautions will be required to avoid promoting mould growth. Mould growth is encouraged by stagnant air. Therefore a positive air flow is required throughout the facility during operating hours as a minimum requirement. This can be achieved through methods such as the use of ceiling fans, cross-ventilation of the building, and various mechanical means. Good housekeeping practices are also essential. Dust should not be allowed to accumulate, as it is a source of mould spores. Periodic inspections should be made of the facility and the holdings, specifically to seek evidence of mould.

For long-term storage in the tropics see the recommendations given in Table C – Records 30 years of age and over in all environments.

Technical notes – Table C – Records 30 years of age and over in all environments

For records of enduring value (eg records kept for more than 30 years), the temperature recommended for black and white photographic materials is expressed as '<18°C'. This indicates that while a temperature of 18°C is suitable for storing this type of material, lowered temperatures are even more advantageous, as they will increase the longevity of the material. For instance, if cellulose acetate film is stored at 18°C and 35% RH, its predicted life span before the onset of 'vinegar syndrome' (a type of irreversible deterioration) is 80 years. If the temperature is lowered to 13°C the period before onset of vinegar syndrome is 175 years. Similarly, for colour photographic materials 5°C is an acceptable temperature level, but at temperatures lower than 5°C even greater longevity is predicted. However, lowered temperature should only be used if stability can be concurrently achieved, as widely fluctuating temperatures will also lead to deterioration. It should be noted that at lowered temperatures it is necessary to establish an acclimatisation procedure for movement in and out of storage.

Table A – Guidelines for storage of records up to 30 years in tropical environments

Format	Environmental conditions			Safety and protection				
	Temp/RH	Air quality	Lighting	Fire	Security	Housing	Building	Packaging/ containers
Paper (a) <ul style="list-style-type: none"> Files Cards Volumes Computer print-outs and other papers 	<ul style="list-style-type: none"> Temperature not exceeding 27°C Relative humidity not exceeding 60% 	<ul style="list-style-type: none"> Well ventilated 	<ul style="list-style-type: none"> Ambient light 	<ul style="list-style-type: none"> Heat/smoke detection Fire alarms Sprinkler system Extinguishers 	<ul style="list-style-type: none"> Intruder resistant area Controlled access 	<ul style="list-style-type: none"> Coated metal shelving 	<ul style="list-style-type: none"> Accessible location Non-flood prone Non-polluted environment 	<ul style="list-style-type: none"> Robust, clean containers or boxes Clean folders or envelopes
Paper (b) <ul style="list-style-type: none"> Maps Plans Charts 						<ul style="list-style-type: none"> Coated metal shelving or plan cabinets Rolled or vertical storage 		<ul style="list-style-type: none"> Bird, bat, insect and rodent proof Adequate floor loading
Photographic media black and white or colour <ul style="list-style-type: none"> Sheet film Cine film Xrays Microforms Prints 	<ul style="list-style-type: none"> 20°C ± 2°C 50% RH ± 5% 					<ul style="list-style-type: none"> Coated metal shelving 	<ul style="list-style-type: none"> Pitched roof for water run-off High capacity drainage system No flat roofs or box gutters Loading dock separate from storage area Cyclone proof 	<ul style="list-style-type: none"> Robust, clean containers or boxes Clean folders or enclosures
Magnetic media <ul style="list-style-type: none"> Computer tapes and disks Video tapes Audio tapes Magneto-optical disks 						<ul style="list-style-type: none"> Non-magnetisable shelving 		<ul style="list-style-type: none"> Non-magnetisable sealed containers, cassette cases or sleeves
Optical media <ul style="list-style-type: none"> Compact and mini discs Laser discs 						<ul style="list-style-type: none"> Coated metal shelving 		<ul style="list-style-type: none"> Clean containers, envelopes or enclosures
Miscellaneous <ul style="list-style-type: none"> Gramophone discs Models Objects Mixed media items 						<ul style="list-style-type: none"> Temperature not exceeding 27°C Relative humidity not exceeding 60% 		<ul style="list-style-type: none"> Clean containers, enclosures or wrapping

Table B – Guidelines for storage of records up to 30 years in non-tropical environments

Format	Environmental conditions			Safety and protection				
	Temp/RH	Air quality	Lighting	Fire	Security	Housing	Containers	Packaging
Paper (a) <ul style="list-style-type: none"> Files Cards Volumes Computer print-outs and other papers 	<ul style="list-style-type: none"> Temperature not exceeding 27°C Relative humidity not exceeding 60% 	<ul style="list-style-type: none"> Well ventilated 	<ul style="list-style-type: none"> Ambient light 	<ul style="list-style-type: none"> Heat/smoke detection Fire alarms Sprinkler system Extinguishers 	<ul style="list-style-type: none"> Intruder resistant area Controlled access 	<ul style="list-style-type: none"> Coated metal shelving 	<ul style="list-style-type: none"> Robust, clean containers (eg new cardboard boxes) 	<ul style="list-style-type: none"> Clean file covers, folders or envelopes
Paper (b) <ul style="list-style-type: none"> Maps Plans Charts 						<ul style="list-style-type: none"> Coated metal shelving or plan cabinets Rolled or vertical storage is acceptable 	<ul style="list-style-type: none"> Robust, clean containers (eg new cardboard boxes) 	<ul style="list-style-type: none"> Individual enclosures not required
Photographic media black and white or colour <ul style="list-style-type: none"> Sheet film Cine film Xrays Microforms Prints 	<ul style="list-style-type: none"> 20°C ± 2°C 50% RH ± 5% 					<ul style="list-style-type: none"> Coated metal shelving 	<ul style="list-style-type: none"> Robust, clean containers (eg new cardboard boxes) 	<ul style="list-style-type: none"> Clean folders or enclosures
Magnetic media <ul style="list-style-type: none"> Computer tapes and disks Video tapes Audio tapes Magneto-optical disks 						<ul style="list-style-type: none"> Non-magnetisable shelving 	<ul style="list-style-type: none"> Non-magnetisable sealed containers, cassettes cases or sleeves 	<ul style="list-style-type: none"> Non-magnetisable sealed containers, cassettes cases or sleeves
Optical media <ul style="list-style-type: none"> Compact and mini discs Laser discs 						<ul style="list-style-type: none"> Coated metal shelving 	<ul style="list-style-type: none"> Robust, clean containers (eg new cardboard boxes) 	<ul style="list-style-type: none"> Clean envelopes or enclosures
Miscellaneous <ul style="list-style-type: none"> Gramophone disks Models Objects Mixed media items 						<ul style="list-style-type: none"> Robust, clean containers (eg new cardboard boxes) 	<ul style="list-style-type: none"> Clean enclosures or wrapping 	

Table C – Guidelines for storage of records 30 years of age or over in all climatic regions

Format	Environmental conditions			Safety and protection				
	Temp/RH	Air quality	Lighting	Fire	Security	Housing	Containers	Packaging
Paper (a) <ul style="list-style-type: none"> Files Cards Volumes Computer print-outs and other papers 	<ul style="list-style-type: none"> 20°C ± 2°C 50%RH ± 5% 	<ul style="list-style-type: none"> Well-ventilated and filtered to exclude dust and other particles, acidic and oxidising gases 	<ul style="list-style-type: none"> UV filtered fluorescent lighting Timer controlled switches 	<ul style="list-style-type: none"> Heat/smoke detection Fire alarms Sprinkler system Extinguishers 	<ul style="list-style-type: none"> 24-hour physical or electronic surveillance Alarm systems Controlled access 	<ul style="list-style-type: none"> Powder coated or baked enamel metal shelving 	<ul style="list-style-type: none"> Archival quality acid-free boxes 	<ul style="list-style-type: none"> Archival quality acid-free file covers, folders or envelopes
Paper (b) <ul style="list-style-type: none"> Maps Plans Charts 						<ul style="list-style-type: none"> Powder coated or baked enamel metal shelving or plan cabinets Flat storage 	<ul style="list-style-type: none"> Archival quality acid-free folders or containers 	<ul style="list-style-type: none"> Archival quality acid-free sleeves enclosures or interleaving
Photographic media (a) black and white <ul style="list-style-type: none"> Sheet film Cine film Xrays Microforms Glass plate photos 	<ul style="list-style-type: none"> <18°C ± 2°C 35% RH Records stored at <10°C must be acclimatised before and after cold storage 	<ul style="list-style-type: none"> As above NB degrading cellulose acetate or nitrate films must be isolated from other records 	<ul style="list-style-type: none"> UV filtered fluorescent lighting Timer controlled switches 	<ul style="list-style-type: none"> VESDA™ (very early smoke detection apparatus) Fire alarms Extinguishers Gas flooding or sprinkler system 	<ul style="list-style-type: none"> 24-hour physical or electronic surveillance Alarm systems Controlled access 	<ul style="list-style-type: none"> As above NB glass plates require stationary shelving and vertical storage 	<ul style="list-style-type: none"> Archival non-buffered containers that have passed the Photographic Activity Test (PAT) 	<ul style="list-style-type: none"> Archival non-buffered enclosures that have passed the Photographic Activity Test (PAT)
Photographic media (b) colour <ul style="list-style-type: none"> Sheet film Cine film 	<ul style="list-style-type: none"> <5°C 35% RH ± 5% Records must be acclimatised before and after cold storage 	<ul style="list-style-type: none"> As above 				<ul style="list-style-type: none"> As above (may be in a freezer or refrigerator) 	<ul style="list-style-type: none"> Glass plates require additional shock protection 	<ul style="list-style-type: none"> As above Frozen material must be in sealed vacuum packages
Magnetic media <ul style="list-style-type: none"> Computer tapes and disks Video tapes Audio tapes Magneto-optical disks 	<ul style="list-style-type: none"> 18°C ± 2°C 35% RH ± 5% 	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> UV filtered fluorescent lighting Timer controlled switches 	<ul style="list-style-type: none"> VESDA™ (very early smoke detection apparatus) Fire alarms Extinguishers Gas flooding or sprinkler system 	<ul style="list-style-type: none"> 24-hour physical or electronic surveillance Alarm systems Controlled access 	<ul style="list-style-type: none"> Non-magnetisable shelving 	<ul style="list-style-type: none"> Non-magnetisable, archival quality sealed containers, cassettes cases or sleeves 	
Optical media <ul style="list-style-type: none"> Compact and mini discs Laser discs 	<ul style="list-style-type: none"> 20°C ± 2°C 50% RH ± 5% 					<ul style="list-style-type: none"> Powder coated or baked enamel metal shelving 	<ul style="list-style-type: none"> Archival quality acid-free containers or boxes 	<ul style="list-style-type: none"> Archival quality acid-free envelopes or enclosures
Miscellaneous <ul style="list-style-type: none"> Gramophone discs Models Objects Mixed media items 		<ul style="list-style-type: none"> 20°C ± 2°C 50% RH ± 5% 	<ul style="list-style-type: none"> As above 	<ul style="list-style-type: none"> UV filtered fluorescent lighting Timer controlled switches 	<ul style="list-style-type: none"> Heat/smoke detection Fire alarms Sprinkler system Extinguishers 	<ul style="list-style-type: none"> 24-hour physical or electronic surveillance Alarm systems Controlled access 	<ul style="list-style-type: none"> As above Stationary shelving Gramophone disks require vertical storage 	<ul style="list-style-type: none"> Archival quality acid-free enclosures or wrapping